

THE NORTH BAY AQUEDUCT

The North Bay Aqueduct, located north of the San Francisco Bay, is part of the State Water Project. It is a 27-mile underground pipeline serving municipal and industrial water users in Napa and Solano counties. The Aqueduct was constructed in two phases. The first phase, which was built during 1967-68, consisted of both permanent and temporary facilities. Permanent facilities included the Cordelia Surge Tank, the Napa Turnout Reservoir and a four-mile pipeline connecting the two. Temporary facilities included a pumping plant and pipeline from the terminal reservoir of the Putah South Canal, through which water from the federal

Solano Project was delivered to Napa County. While no longer routinely used, the temporary pumping plant and pipeline are maintained for use during emergencies.

The second phase construction, which began in 1985, extended the pipeline another 23 miles from the Cordelia Surge Tank eastward to Barker Slough. SWP water for North Bay Aqueduct customers is pumped from the slough on the western edge of the Delta.

Phase I began operating in 1968 and Phase II in 1988.



Cover: Barker Slough Pumping Plant

Our Mission

To manage and protect the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore and enhance the natural and human environments.



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THE STATE WATER PROJECT

Planned, designed, constructed and operated by the California Department of Water Resources (DWR), the State Water Project (SWP) is the largest state-built, multi-purpose, user-financed water project in the United States.

The SWP, spanning more than 600 miles from Northern California to Southern California, includes 34 storage facilities, 20 pumping plants, four pumping-generating plants, five hydroelectric power plants and approximately 700 miles of canals, tunnels and pipelines.

The SWP’s main purpose is to provide a water supply – that is, to divert and store water during wet periods – and distribute it to areas of need during dry periods in Northern California, the San Francisco Bay Area, the San Joaquin Valley, the Central Coast and Southern California. Other project purposes include flood control, power generation, recreation, fish and wildlife enhancement and water quality improvements to the Sacramento-San Joaquin Delta.

Cordelia Forebay and Pumping Plant



Barker Slough Pumping Plant

The \$1.75 billion bond issue of 1960 provided initial funding for the SWP, and payments received from 29 contracting agencies are paying off the bonds. These 29 urban and agricultural water agencies have long-term contracts for the delivery of SWP water. Approximately 70 percent of SWP water goes to urban users and 30 percent to agricultural users. These SWP contracting agencies are repaying the cost, including interest, of financing, building, operating and maintaining the SWP water storage and delivery system.

THE DELIVERY SYSTEM

At the Barker Slough Pumping Plant located a few miles north of Rio Vista, North Bay Aqueduct water begins its journey westward through a six-foot diameter pipeline to the Cordelia Pumping Plant Forebay. Water is delivered to Travis Air Force Base and to the Solano County communities of Fairfield, Suisun City and Vacaville through two turnouts along the way. (A turnout is a structure through which water is diverted from the pipeline.)

The Cordelia Pumping Plant has three separate discharge pipelines. Benicia and Vallejo are each served by a separate pipeline; the third pipeline carries water to the Cordelia Surge Tank, a 44.5-foot high, 15-foot diameter structure which is easily seen from Interstate 80 near the turnoff for Highway 12 North. (The surge tank protects the pipeline from damage caused by the large pressure changes that can occur when valves in the pipeline are rapidly opened or closed.) Water continues from the surge tank through a four-mile

pipeline to the Napa Turnout Reservoir, a 22-acre-foot (7,168,000 gallon) storage tank which is the western terminus of the North Bay Aqueduct.

Two turnouts at the reservoir deliver water to the American Canyon Water District and to the City of Napa, which in turn uses its facilities to deliver water to Yountville and Calistoga in Napa County.

The North Bay Aqueduct will ultimately deliver 67,000 acre-feet of water a year - 42,000 acre-feet to the Solano County Flood Control and Water Conservation District and 25,000 acre-feet to the Napa County Flood Control and Water Conservation District.

North Bay Aqueduct water provides a supplemental supply for the area. The major sources of water for the area are local and federal reservoirs, and groundwater basins.

STATISTICS

| | Capacity of Pumping Plant (cubic feet per second) | Design Dynamic Head* |
|---------------|---|----------------------------|
| Barker Slough | 228.0 | 137 |
| Cordelia | | |
| Napa | 52.4 | 384 |
| Benicia | 32.6 | 279 |
| Vallejo | 53.0 138.0 | 128 |

(one cubic foot equals 7.48 gallons)
* Lift including force required to move water against losses due to friction

Cordelia Pumping Plant

